

Remarks

Claims 2-10 and 12-27 remain pending.

Information Disclosure Statement

Applicants submit that the foreign patent document **CN100334894** is the corresponding Chinese patent of this application. The **CN100334894** document and the English translation of its cover page were submitted for the Examiner's reference. Applicants submit that details of prior art cited, if any, during the prosecution of the corresponding Chinese application were provided to the Examiner in a timely manner.

Double Patenting

The Examiner provisionally rejected claims 2-6, 8-10, and 12-27 on the grounds of non-statutory obviousness-type double patenting over claims 1 to 14 of co-pending U.S. Patent Application No. 11/928848 (Zhao et al). The Examiner also provisionally rejected claim 7 on the grounds of non-statutory obviousness-type double patenting over claims 1 to 14 of co-pending U.S. Patent Application No. 11/928848 (Zhao et al) in view of U.S. Patent 4,827,507 (Marry et al). Applicants respectfully request that this objection be held in abeyance pending allowance of one of the applications.

35 U.S.C. §102 rejections: Virtanen

The Examiner rejected claims 2-6, 9, 10, 12-16, 18 and 21-27 as being anticipated by U.S. Patent No. 6,249,681 (Virtanen). Applicants respectfully disagree for at least the following reasons.

Independent claim 12 reads (emphasis added):

A method of automatically maintaining a previously established data connection on a wireless data network, comprising:
determining, at minimum fixed time intervals determined by a service check timer, the status of the previously established data connection;
automatically transmitting a connection request if the previously established data connection is determined to be lost; and

re-establishing the previously established data connection if the transmitted connection request is accepted by the wireless data network.

Further, independent claim 21 reads (emphasis added):

A mobile device for establishing and maintaining a data connection to a wireless data network, the mobile device comprising:

a back off timer for timing a back off period between retries to establish the data connection;

a service check timer for setting a minimum fixed interval after which a previously established data connection is checked to determine if it has been lost; and

a connection manager for determining if the previously established data connection between the mobile device and the wireless network exists or has been lost; for resetting the service check timer upon its expiry if the data connection exists; for transmitting connection requests to the wireless network upon initialization, upon expiry of the back off timer, and upon expiry of the service check timer if the previously established data connection has been lost; and for resetting the back off timer in response to receipt of a connection rejection from the wireless network.

The method as claimed in claim 12 provides for automatically maintaining a previously established data connection on a wireless data network. In accordance with the method as claimed in claim 12, the status of the previously established connection is determined at minimum fixed intervals as determined by a service check timer. If the previously determined data connection is determined to be lost, a connection request is automatically transmitted and the data connection is re-established if the wireless data network accepts the transmitted connection request.

Claim 21 is a corresponding device claim directed to mobile device for establishing and maintaining a data connection to a wireless data network.

The Examiner, at page 7 of the Office Action dated June 6, 2008, states that, “Virtanen teaches a method of automatically re-establishing a data connection on a wireless data network (see Title and Abstract), comprising: determining, at minimum fixed time intervals determined by a service check timer, the status of a previously established data connection (see Abstract, column 2, line 36 to column 3, line 9, column 4, lines 21-67, column 8, lines 19-63 and column 10, lines 23-62, see “time” or “timer”), automatically transmitting a connection request if the previously established data connection is determined to be lost (see column 1, lines 59-67, column 4, lines 44-67, column 5, lines 1-15, and column 12, line 3 to column 13, line 8, see “request”), and re-establishing the previous established data connection if the transmitted connection request is accepted by the wireless data network (see column 1, lines 34-40, see “an ongoing call...is broken while the call is in progress, the call must be re-established in order for the call the be completed”, and it reads on Applicant’s “previously established”).”

Applicants respectfully submit that Virtanen fails to teach each and every feature of claim 12, and that of corresponding claim 21; and that Virtanen is does not teach or suggest a method and a system for establishing and maintaining an “always on” data connection to a wireless data network.

As submitted in the Response dated April 3, 2008, Virtanen teaches a method and apparatus for packet data call re-establishment in a telecommunication system. Virtanen does not disclose, “*determining, at minimum fixed time intervals determined by a service check timer, the status of the previously established data connection*” as claimed in claim 12. Nor does Virtanen teach or disclose, “*a service check timer for setting a minimum fixed interval after which a previously established data connection is checked to determine if it has been lost*” as claimed in claim 21.

In contrast, Virtanen is concerned only with “re-establishing an interrupted data packet call on a channel between two transceiving devices in a telecommunications system” (emphasis added, see Abstract of Virtanen). Virtanen simply teaches a method for re-establishing an interrupted packet data call while shortening the time and decreasing signaling required to re-establish the interrupted packet data call. Virtanen does not teach or suggest a method or a system to establish and automatically maintain a data connection to a wireless data network as claimed in claims 12 and 21.

The passages cited by the Examiner are general procedures involved with the re-establishment of a call and do not teach or suggest a method of automatically maintaining a previously established data connection on a wireless data network as claimed in claim 12; or mobile device for establishing and maintaining a data connection to a wireless data network as claimed in claim 21.

The Examiner cites Virtanen's Abstract; column 2, line 36 to column 3, line 9; column 4, lines 21-67; column 8, lines 19-63; and column 10, lines 23-62 as teaching the step of determining, at minimum fixed time intervals determined by a service check timer, the status of a previously established data connection as claimed in claims 12 and 21 (see Office Action Page 7). This is simply not the case. Nowhere does Virtanen teach or suggest a service check timer as claimed in claims 12 and 21.

Virtanen's Abstract does not teach a service check timer as claimed in claims 12 and 21

As described earlier, the Abstract of Virtanen summarizes a method and apparatus for re-establishing an interrupted data packet call on a channel between two transceiving devices in a telecommunications system. In one embodiment of Virtanen, when a packet data has not been sent or received in the call for a predetermined time period, the call is released and call configuration information is saved in at least one of the transceiving devices. If, within another predetermined time period, it is necessary to transmit further packet data for the call, either one of the transceiving devices may initiate the sending of a call re-establishment message to re-establish the call. The call re-establishment message is used to retrieve the call configuration information that was saved upon call release. The call is then re-established using the information in the re-establishment message and the retrieved call configuration information.

It is evident that any timers associated with the call release or call re-establishment, is not the same as the service check timer as claimed in claims 12 and 21. A call release timer or inactivity timer is used to release a call when a packet data has not been sent or received for a predetermined time period. A call re-establishment timer or re-establish timer is used to reinitiate a call using stored call configuration information within another predetermined time

period. Neither pre-determined time period described in Virtanen's Abstract is for determining the status of a previously established data connection, and thus any timers associated therewith is not the service check timer as claimed in claims 12 and 21.

Virtanen at column 2, line 36 to column 3, line 9 does not teach a service check timer as claimed in claims 12 and 21

The passages at column 2, line 36 to column 3, line 9 of Virtanen describe the limitations of a GSM-type re-establishment procedure in an application such as IS-657/TSB-74 for re-establishing a lost connection. In this context, a packet inactivity timer used by IS-657/TSB-74 connection based packet data in each of the base station/mobile switching center (MSC) and mobile station is described. Each inactivity timer is reset wherever packet data frame is sent or received. Moreover, "if the packet inactivity timer expires before more data is sent or received, in either the mobile station or base station/MSC, the mobile station or base station/MSC in which the packet inactivity timer expired disconnects the packet switching service option by sending a release order message. The release order message causes the connection to be released by both the mobile station and the base station/MSC" (see Virtanen, column 2, lines 44-51, emphasis added).

Clearly, the packet inactivity timer, as the name suggests, is used for checking a packet data frame activity within a predetermined time and is not used for determining the status of a previously established data connection. Thus, the packet inactivity timer is not the service check timer as claimed in claims 12 and 21.

Virtanen at column 4, lines 21 to 67 does not teach a service check timer as claimed in claims 12 and 21

Virtanen describes the details of a call-release or inactivity timer at each of the mobile station and the base station/MSC that is "reset and started when a latest packet data is sent or received" (see Virtanen, column 4, lines 22-23). The call-release or inactivity timer is "set to run a predetermined period and, if no packet data is sent or received to reset the timer before the predetermined period expires, the transceiving device (mobile station or base station) in which the timer expires sends a release order message to the other device" to release the call (see Virtanen, column 4, lines 23-28, emphasis added). The cited passages further describe

the contents of the release order message and how a call can be re-established using information in the release order message upon initiation of re-establishment of the call.

Contrary to the status check timer, as claimed in claims 12 and 21, that determines the minimum fixed time intervals at which the status of a previously established data connection is determined; the call-release or inactivity timer of Virtanen automatically releases an established packet data call due to inactivity and does not maintain an always-on connection as claimed in claims 12 and 21.

Thus, the call-release or inactivity timer is not the service check timer as claimed in claims 12 and 21.

Virtanen at column 8, lines 19 to 63 does not teach a service check timer as claimed in claims 12 and 21

The passages at column 8, lines 19-67 of Virtanen, further describe the inactivity timer with reference to Figs 3A-C of Virtanen. As described earlier the inactivity timer of Virtanen automatically releases an established packet data call due to inactivity and does not maintain an always-on connection as claimed in claims 12 and 21. Specifically, Virtanen teaches, "if a packet transmission does not resume before the Terminate time period 122 expires at time 130, packet service is disconnected at time 130. During time period 140 the call has been released" (see Virtanen, column 8, lines 31-33, emphasis added).

Thus, the inactivity timer is not the service check timer as claimed in claims 12 and 21.

Virtanen at column 10, lines 23 to 62 does not teach a service check timer as claimed in claims 12 and 21

Virtanen describes the details of a re-establish timer that determines a time period within which a released call may be re-established using saved call configuration information. Specifically, Virtanen teaches "the re-establish timer determines how long call configuration information is saved, without either of the MS 10 or MSC 34 initiating re-establishment, after a call is released with a re-establishment possible indication in the call release message" (see Virtanen, column 10, lines 28-32, emphasis added).

It is evident that the re-establish timer is used to re-establish released calls and not to determine the status of previously established data connection with a view to automatically re-establishing the data connection if the data connection is determined to be lost, as claimed in claims 12 and 21.

Thus, the re-establish timer is not the service check timer as claimed in claims 12 and 21.

Virtanen at column 1, lines 59 to 67; column 4, lines 44-67; column 5, lines 1-15; and column 12, line 3 to column 13, line 8 merely describes various procedures for re-establishing a packet data call

Applicant reiterates the remarks made in the Response dated April 3, 2008, with respect to the re-establishment of packet data calls described by Virtanen.

Specifically, Virtanen at column 1, line 9 to column 2, line 4, describes that, "systems based on the GSM standard may support a mobile station triggered call re-establishment procedure that uses a call re-establishment message that includes only the subscriber identity of the mobile station and the mobile station's classmark." The cited passage further recites the details associated with the re-establishment procedure according to GSM standard.

The passages at column 4, lines 44-67, of Virtanen have already been discussed above.

Column 5, lines 1 to 15 of Virtanen summarizes an embodiment disclosed therein for re-establishing a call using a re-establishment request message. Column 12, line 3 to column 13, line 8 of Virtanen further describe in detail the embodiment for re-establishing a call using re-establishment request message with reference to Figures 7A and 7B.

Nowhere does Virtanen teach the determination of the status of a previously established data connection at minimum fixed intervals set by a service check timer, as claimed in claim 12. Nor does Virtanen teach a service check timer for setting a minimum fixed interval after which a previously established data connection is checked to determine if it has been lost, as claimed in claim 21.

As submitted in the Response dated April 3, 2008, Virtanen teaches three different timers none of which is, in fact, a service check timer for setting a minimum fixed interval after which a previously established data connection is checked to determine if it has been lost. The various timers disclosed by Virtanen are discussed below with reference to Figure 4 of Virtanen.

Virtanen discloses an inactivity timer upon expiry of which “ a release order message is formatted with MS 10. The release order message is a modified IS-95 release order that functions to indicate to network 32 that call re-establishment is possible with call release” (see column 9, lines 5 to 9 of Virtanen). Thus, the inactivity timer of Virtanen automatically releases an established packet data call due to inactivity and does not maintain an always-on connection as claimed herein.

Virtanen discloses a second timer, a release timer, which is started upon receipt, from the base station, of a return “release order message 912 in response on the forward traffic channel” (see column 9, lines 63 to 65 of Virtanen). The base station saves the current service configuration information and releases the call after the expiry of the release timer. The release timer of Virtanen is simply not the same as the service check timer claimed in claims 12 and 21.

Virtanen further teaches a third timer, a re-establish timer, which is started by the MS after releasing the call at the MS side. According to Virtanen, “the re-establish timer determines how long call configuration information is saved, without either the MS 10 or MSC 34 initiating re-establishment, after a call is released with a re-establishment possible indication in the call release message” (see column 10, lines 28 to 32 of Virtanen). Furthermore, Virtanen states that, “at step 420 it is determined if the re-establish timer in either the MS 10 or the MSC 34 has expired. If the re-establish timer has expired in either the MS 10 or the MSC 34, the process moves to step 425 where the old configuration is deleted from the memory of the device in which the time expired” (see column 10, lines 53 to 58 of Virtanen). Thus, the re-establish timer merely sets the amount of time during which configuration information is saved so that the call may be quickly re-established by either the base station or the mobile station. The re-establish timer is not a timer based on which the status of a previously established data connection is checked in order to maintain an always-on connection as claimed in claims 12 and 21.

Thus, Virtanen simply teaches a method for re-establishing an interrupted packet data call while shortening the time and decreasing signaling required to re-establish the interrupted packet data call. Virtanen achieves this by storing the current service configuration information until the expiry of related timers in the mobile and base stations. Nothing in Virtanen teaches or suggests maintaining an always-on connection as claimed in claims 12 and 21.

Virtanen does not contemplate a service check timer for setting a minimum fixed interval after which a previously established data connection is checked to determine if it has been lost, simply because the problem solved by Virtanen is to quickly and efficiently re-establish interrupted packet data calls and not to establish and automatically maintain a data connection to a wireless data network as claimed in claims 12 and 21.

Thus, Virtanen fails to teach or suggest all the limitations of independent claims 12 and 21, and their respective dependent claims 2 to 6, 9, 10, 13-16, 18 and 22 to 27. Accordingly, at least for the reasons provided above, Applicants respectfully request that the rejections under 35 U.S.C. §102(e) be withdrawn.

Other Rejections

The Examiner rejected claims 7 and 8 as being obvious in view of Virtanen and further in view of U.S. Patent No. 4, 827,507 (Marry); claim 17 as being unpatentable over Virtanen; claim 19 as being unpatentable over Virtanen in view of an Official Notice; and claim 20 as being obvious in view of Virtanen in view of U.S. Publication No. 2002/0082032A1 (Hunzinger).

Each of claims 7, 8, 17, 19, and 20 is dependent, directly or indirectly, from claim 12, and includes all the limitations of claim 12. Applicants reiterate the comments made above in respect of Virtanen, and submit that, since Virtanen does not teach or suggest all the claimed limitations of independent claim 12, Virtanen cannot teach or reasonably suggest all the limitations of a narrower claim dependent from claim 12. Applicants further submit that none of Marry, the Official Notice or Hunzinger II teach or suggest a service check timer that determines the minimum fixed time intervals at which an established data connection is

checked, as claimed in claims 12 and 21.

Therefore, Applicants submit that there is no combination of the cited references that can teach or suggest all the claimed limitations in claims 7, 8, 17, 19, or 20, and no showing of *prima facie* obviousness can be made. Withdrawal of the rejections under U.S.C. §103(a) is respectfully requested.

It is submitted that this application is in condition for allowance, and action to that end is respectfully requested.

No fee is believed due for this submission. However, Applicant authorizes the Commissioner to debit any required fee from Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP. The Commissioner is further authorized to debit any additional amount required, and to credit any overpayment to the above-noted deposit account.

Respectfully submitted,

ZHAO, Wen et al.

By: /Mukundan Chakrapani/

Mukundan Chakrapani
Reg. No. 60,879

Borden Ladner Gervais LLP
World Exchange Plaza
100 Queen Street, Suite 1100
Ottawa, ON K1P 1J9
CANADA
Tel: (613) 237-5160
Fax: (613) 787-3558
E-mail: ipinfo@blgcanada.com

MC/mc